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Forest & Shade Tree - Insect & Disease Conditions for Maine
May 15, 2009

Late April, May, and early June is the most critical time for the development of many leaf and needle diseases of both hardwood and conifer trees, as well as for many insect pests on Christmas trees, ornamentals and in woodlots. Through April, rainfall was abundant with long periods of dry weather between rains. The rainfall pattern in May has seemed to switch to lighter daily rainfall totals, but for longer periods, with little drying in between. At this particular time of year, these conditions are especially conducive to the development of many foliage diseases. Most preventive insecticides and fungicides will need to be applied very soon in order to be of any significant benefit (refer to the chart below, and to the April *Conditions Report* for pesticide recommendations). And, we may still experience a late spring frost in some areas. Spring frosts are especially damaging to young shoots and developing foliage. Making note of any unusual local weather conditions is always helpful when attempting to diagnose tree and other plant problems later in the season.

Guide to Pest Management for May

Remember that this is just a guide and that conditions will vary. Information on any entry preceded by an (*) may be available on our website or can be requested by calling or writing to the Insect and Disease Laboratory, 168 State House Station, Augusta, Maine 04333-0168; Phone (207) 287-2431; Fax (207) 287-2432.

Insect/Disease	Cultural Controls	Chemical Controls
*Balsam Gall Midge		The tiny mosquito-like adults should emerge between now and early June. Populations are up so Christmas tree growers should monitor their plantations and apply Diazinon or chlorpyrifos (Lorsban) if necessary as the new needles emerge and flatten.
Balsam Shootboring Sawfly		Too late now for chemical control.
*Balsam Twig Aphid		Last chance now for control in southern Maine. Control may be achieved using Diazinon or chlorpyrifos (Lorsban) in northern and eastern Maine as buds begin to break.

Insect/Disease	Cultural Controls	Chemical Controls
Balsam Woolly Adelgid	Rogue out and destroy infested stock from Christmas tree plantations and be sure that planting stock is from a clean source. In forested situations harvest ahead of mortality.	Esfenvalerate (Asana) or Imidicloprid. Low population levels will render treatments unnecessary for most growers this year.
*Birch Leaf Miner		Watch for black fly-like adults around the foliage from now through mid-June. Apply foliar treatment with carbaryl (Sevin) or acephate (Orthene) when small developing mines (seen as small translucent spots in the leaves) are evident.
*Browntail Moth	Avoid mowing or raking in infested areas to avoid stirring up the hazardous caterpillar hairs. Clip overwintering webs next winter.	Treatment against the caterpillar stage should be done now. Call for more information. Check with the Board of Pesticide Control for the **regulations for spraying near water**.
*Gypsy Moth	Begin watching for larval activity this season. Tiny larvae frequently drift around on spring breezes. If found, be prepared to remove and destroy egg masses next fall.	Monitor populations now to determine whether or not control will be necessary. Treatment options include Bt, acephate (Orthene) and carbaryl (Sevin).
*Hemlock Looper		Watch for tiny looper larvae with black heads in early June. Survey methods are available and should be done in early June for this season. Treat in late June if necessary with Bt.
*Hemlock Woolly Adelgid	Please contact us.	Please contact us.
*Mountain Ash Sawfly	Remove and destroy infested leaves early as egg pouches or tiny larvae appear in late May.	Treat older larvae with acephate (Orthene) or carbaryl (Sevin).
*Pine Shoot Beetle	Please contact us	Please contact us.
Rhizosphaera Needlecast of Spruce		Chlorothalonil (Bravo, Daconil) copper hydroxide (Kocide), or mancozeb (Protect T/O) when needles are +/- 0.5 inch long and again 10 days to two weeks later
Sphaeropsis (Diplodia) Tip Blight of 2 and 3 needle Pines		Copper hydroxide (Kocide, Bordeaux Mix) or chlorothalonil (Bravo, Daconil) shortly after budbreak and again 10 days to two weeks later.

Insect/Disease	Cultural Controls	Chemical Controls
*Viburnum Leaf Beetle	Prune off twigs with egg pockets on them before hatch (early- to mid-May).	Treat infested shrubs early (before the end of May) with acephate (Orthene), carbaryl (Sevin) or chlorpyrifos.
*Yellowheaded Spruce Sawfly	Small infestations may be controlled by hand picking larvae and dropping them into soapy water.	Watch for adults around foliage in late May and early June. Look for developing larvae in June and be prepared to treat with carbaryl (Sevin), chlorpyrifos (Lorsban) or spinosad (Success) if populations warrant.
Yellow Witches Broom of Balsam Fir	Prune brooms from Christmas trees, taking care to make pruning cuts below galls at the bases of brooms. Weed control may help with management, since alternate hosts are species in the family Caryophyllaceae, including chickweed *(Stellaria media)* and mouse-ear chickweed *(Cerastium vulgatum)*.	None effective at this time.

***NOTES**: These recommendations are not a substitute for pesticide labeling. Read the label before applying any pesticide. Pesticide recommendations are contingent on continued EPA and Maine Board of Pesticides Control registration and are subject to change. Other effective registered fungicides are available and marketed under other product names. No endorsement or exclusion of similar products not mentioned by the Maine Forest Service is intended or implied. Ask your supplier for specifics, and always read the label of any product before applying on site.

Restricted-use pesticide may be purchased and used only by certified applicators. **Caution**: For your own protection and that of the environment, apply the pesticide only in strict accordance with label directions and precautions.

INSECTS

Ash Bark Beetles (*Hylesinus* spp.) – Evidence of ash bark beetles (and the critters themselves) is beginning to be noticed in firewood piles across the state. You may see small piles of frass (fine sawdust-like material in this case), galleries (larval feeding tunnels) etched into your ash firewood or standing dead trees, and bark peppered with *round* exit holes just over a millimeter in diameter. Native ash bark beetles tend to develop in weakened and felled trees and are rarely a problem in healthy trees. We appreciate people paying attention to insect signs in their ash firewood, and would want to hear from you if you found ash with S-shaped galleries etched into the wood and bark and D-shaped exit holes. These are symptoms of emerald ash borer, a *serious* invasive forest pest.

Balsam Twig Aphid ((*Mindarus abietinus*) – Balsam twig aphid populations were low in the areas checked. Christmas tree growers who had a problem last year should check to see if there are aphids on their trees now. Take a dark piece of paper or cloth, hold it under the outer branches and beat the branches to dislodge the aphids. Look for the tiny, yellow nymphs. Do this twice in 15 trees. If there are more then 2 aphids/tree and you had a problem last year, consider treatment.

***Balsam Woolly Adelgid** (*Adelges piceae*) - The adelgid population is still low in most of Maine and cold January temperatures should push back the population. Balsam woolly adelgid can be found feeding at the base of foliage shoots and cone buds. They are tiny and black and look like little hand grenades with wisps of wool coming off them. I need a hand lens to see them but if you have good eyes you can spot them without one. As the season progresses they will produce more waxy wool to cover both themselves and their eggs. The adelgid feeding causes the branch nodes to swell forming 'gouts' that deform the tree and bud formation is reduced or does not occur at all. Balsam woolly adelgid can also be found on the trunks of fir. Trunk phase adelgids kill trees more rapidly then the gout phase. Christmas tree growers should rogue out any fir showing swelling at branch nodes.

***Birch Leafminer** (*Fenusa pusilla*) **-** Tiny developing mines, resembling translucent spots along the margins of the new leaves, have begun to appear in the southern half of the State and will likely show up by the end of the month in the north. Mines of another **white birch leafminer** (*Messa nana*) usually appear in June.

***Browntail Moth** (*Euproctis chrysorrhoea*) **-** Browntail moth larvae have emerged from their overwintering webs and are feeding on new foliage in the Bath/Topsham/Brunswick area. Very few browntail webs were found outside this vicinity. People in the greater Portland area should check for larvae before having any treatments applied to trees.

For those with browntail larvae this is the time to plan chemical treatment of areas that have webs. (It is too late now to accomplish browntail control through web clipping). Pesticide application should be completed as soon as possible, before the caterpillars develop toxic hairs in early June. We strongly recommend hiring a licensed applicator to control this pest. Homeowners generally should not attempt control of the browntail moth with pesticides to avoid both environmental and personal health concerns. Check with the Board of Pesticide Control before applying browntail moth controls near coastal waters.

Eastern Tent Caterpillar (*Malacosoma americana*) – Webs of eastern tent caterpillars are quite prevalent this year. Egg cases from South Berwick to Guilford popped and the tiny larvae emerged that lovely warm weekend back in April when it hit 85^0F. If you have a web in your crabapple or cherry tree you can simply remove the webs containing the caterpillars and place them in water with a squirt of dishwashing detergent or use a Bt product. Either approach will kill the caterpillars, but do not consider burning them out because this process will result in more injury to the tree than the caterpillars could ever cause.

***Gypsy Moth** (*Lymantria dispar*) - Shadbush is blooming and gypsy moth larvae are hatching. First report from the Bangor area was on the first of May. After hatching these tiny larvae spin out on silken threads and are picked up by breezes. The lucky ones land on suitable host material. Short distance dispersal occurs by way of this "ballooning". Long distance dispersal often is the result of human activities—people unwittingly move egg masses or other life stages on articles such as RV campers, firewood and other items that are stored outside. Few egg masses were found anywhere in Maine when surveys were conducted last fall.

Larch Casebearer (*Coleophora laricella*) - Populations of larch casebearer are are again very low this spring giving the poor trees a break. Even the trees downeast and in mid-Maine that seem to have perennial populations have lovely lush green foliage with only the occasional casebearer.

Pear Thrips (*Taeniothrips inconsequens*) - Pear thrip populations are low again with little damage observed so far this year.

Solitary Bees and Wasps Solitary bees and wasps are starting to emerge. Unlike social bees and wasps which may be aggressive and sting readily, solitary hymenoptera are generally non-aggressive (they don't have nest-mates to protect), and rarely sting. Some cannot sting at all, and with others, you have to seriously harass them before they will sting. Generally high numbers are present only for a week or two as they emerge from their overwintering nests. Then they disperse. If you have gardening or other work to do in the immediate area of the nests, we suggested working for a few days in the morning or evening when the bees are not active. Once informed of their gentle nature, most people are happy to have these wild pollinators in their yard.

***Yellowheaded Spruce Sawfly** (*Pikonema alaskensis*) - Adults will soon be active around young spruce trees. They are particularly attracted to open grown white spruce under 12 feet tall. The eggs hatch in June and most people do not notice the yellow (orange)-headed, striped, green larvae until substantial amounts of foliage have already been eaten off the tree. If you have spruce that have bare lateral branches especially near the top of the tree, check for larval feeding in June.

DISEASES AND INJURIES

European Larch Canker (*Lachnellula willkommii*) - European larch canker is a fungal disease that originated in Europe and was first found on native larch (tamarack) in southeastern Maine (Washington County) in 1981. Information gathered from existing cankers indicates this disease has been present in Maine since the 1960's and perhaps much longer. The disease is under state and federal quarantine. Intensification of the larch canker disease in several Downeast-coastal stands is currently being assessed. The ten-year study, initiated by forest pathologist Dr. David Houston (retired, USDA Forest Service) is now in its ninth year of monitoring. Preliminary results to-date indicate that the pathogen has rapidly intensified, in terms of numbers of cankers initiated and numbers of trees infected, over the past few years. However, tree mortality has remained low, with the primary effect of cankering in lowering stem quality and tree vigor, and possibly on tree growth rate. A detailed examination of a sample of the infected trees at two of the study sites is planned for next year, when this phase of the study will be completed.

Needle Diseases of Arborvitae (Northern-White-Cedar) - Diagnosis of needle problems on Arborvitae can be a real challenge, since there are several insects and diseases that can lead to similar symptoms of needle browning and death. *Kabatina juniperi* and *Phomopsis juniperovora* are two tip blight-causing pathogens more commonly found on species of *Juniperus* (eastern-red-cedar, common juniper, and Rocky Mountain juniper). Both pathogens can also occur on Arborvitae. Each can cause dieback of the branchlet to about four inches from the tip. The fungi will produce small black fruiting structures (pycnidia for *Phomopsis*, or acervuli for *Kabatina*) at the juncture between the living tissue and the infected tissue of the branchlet. The infected tissues often become a dull grayish color. *Macrophoma* has only recently been recognized to occur in Maine, and is another pathogen that can infect Arborvitae foliage. *Macrophoma* can infect the individual scale-like needles, or relatively small groups of needles. Affected tips, individual needles, or small groups of needles usually appear a light tan or straw-colored yellowish brown, rather than grey. Several insect species can also mine the tiny branchlets, and create similar foliage symptoms. Examination of the stem tissue for tunneling and frass can help in making a correct diagnosis, even if the insects themselves are no longer present. Limited chemical controls are available for *Phomposis* and *Kabatina*; none are yet available for *Macrophoma*. In most cases, damage is primarily a loss of aesthetic quality, especially following especially wet springs and summers; tree mortality is very rare.

Porcupine Damage (*Erethizon dorsatum*) **-** Damage to plantation trees, especially Christmas trees, as the result of porcupine feeding occurred at high levels overwinter. It is difficult for us to determine, on the basis of anecdotal evidence, whether damage or animal populations statewide were greater this past winter than other recent winters. However, reports have come from Newburgh and Stockton Springs that several animals have been found roadside. Trapping porcupines near dens or shooting them when encountered provides temporary relief at best. A better approach may be to seek out and change the configuration or habitat of the porcupine den sites near trees to be protected.

***Sirococcus* Tip Blight on Pine and Spruce** (*Sirococcus* spp.) - Last summer, samples of branch tip dieback of white, Colorado Blue, and Siberian spruce were received here at the Lab. The damage was attributed to *Sirococcus conigenus*, a shoot-blight disease of pines, spruces, and other conifers. Last week, an examination of red pines in Northfield revealed classic symptoms and signs of the fungus. Susceptible hosts should be examined closely now for the signs and symptoms, while control measures can still be effectively applied. Damage may be evident on current-year shoots but, in the case of pines, are often more easily recognized in one-year-old needles. The small, black pycnidia of the fungus can be readily seen with a hand-lens, but should also be visible to the naked eye. Symptoms may appear similar to winter injury or frost damage, but affected shoots are often scattered randomly throughout the tree, unlike environmentally-caused damage. When shoot infection occurs early in the season, growth of the elongating tip is arrested, and often the shoots appear slightly curled or twisted. Infected one-year old needles of pines often droop downward along the twig axis. Current fungicide recommendations include copper hydroxide (Bordeaux mixture or Kocide) or chlorothalonil (Bravo) applied just after bud break (mid-May to early June) and again ten days to two weeks later.

White Pine Blister Rust (*Cronartium ribicola*) - White pine blister rust continues to damage pines statewide, and may be especially severe in young (sapling to pole-sized) stands in areas where control of the primary host (currant or gooseberries [*Ribes* spp.]) has never been practiced. This is the best time of the year to find and eradicate by physical removal or herbicide treatment, *Ribes* spp. for white pine blister rust control. If you are unsure of techniques, or need assistance in *Ribes* identification, please contact the Entomology Lab for further information. We can also provide a short field assessment for cases involving white pine blister rust in woodlots or larger forest areas.

Yellow Witches'-broom of Balsam Fir (*Melampsorella caryophyllacearum*) **-** These perennial, bushy growths on branches of fir trees are often abundant in Christmas tree plantations, and are especially conspicuous now as their bright yellow color contrasts with the darker green normal tree foliage. Now is the best time of year to find and destroy them. When cutting brooms from trees, be sure to sever branches an inch or so below the swollen area on the twig at the base of each broom.
